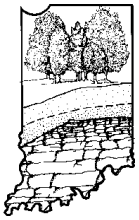
Stewardship Notes

Indiana Division of Forestry

Forest Soils



Most plants depend on soil to sustain life. Soil is the basis upon which most plant life depends for nourishment, moisture and support. Trees depend on the soils' ability to supply these requirements; the soils' ability to do so dictates how well the tree grows. Each soil type has its own unique set of characteristics that distinguish it from all others. Trees, too, have requirements and conditions under which they grow best.

Certain tree species can grow on poor, shallow, dry soils while others are adapted to moist, rich soils. Black walnut, for example, grows best on deep, rich, well-drained soils, free of root restrictions and with a high availability of moisture. This is not to say that walnut will not be found growing on other soils, but rather that it will grow best under these conditions.

The U.S. Department of Agriculture's Natural Resources Conservation Service (formerly the Soil Conservation Service) has classified all Indiana soils into 32 Woodland Suitability Groups. The soils within each group have similar characteristics and can be managed in the same manner. Information concerning the Woodland Suitability Groups includes soil characteristics, management problems, soil types within each group, tree species commonly occurring on these soils and their preference rating, species recommended for tree planting, site index ranges plus predicted production potential (growth rates) for several tree species.

Soils information should be considered when planning tree planting, timber harvesting, improvement work or management practices. For example, logging roads constructed on unstable soils can create severe erosion problems and scar the land. Certain woodland soils should be allowed to maintain a specific tree stocking level to prevent erosion problems.

Soils information is essential when considering tree planting. To improve the survival rate of young seedlings and maximize yields from the future stand, it is imperative to consider soil types.

Soils information is essential when considering timber management practices. Tree species on a given area may not be the ones best suited to that area. Through silvicultural manipulation, the stand can be altered to grow the species most compatible with the given soil.

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If you have soils maps of your land, make them available to the district forester when requesting assistance. If you do not have a soils map, contact the county Natural Resource Conservation Service office to obtain one.

A more comprehensive manual, the *Indiana Forest Soils Handbook*, is available from the Division of Forestry.